



UNITED STATES PATENT AND TRADEMARK OFFICE

(fw)

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,348	10/30/2003	Hideki Nakata	10873.0489USC2	5400
7590	03/22/2006		EXAMINER	
HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902-0902 Minneapolis, MN 55402			CHU, KIM KWOK	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,348	NAKATA ET AL.	
	Examiner Kim-Kwok CHU	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Pre-Amendment filed on 10/30/2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 and 10-16 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10/30/2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/491,100.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art as illustrated in Fig. 10 in view of Nagai (U.S. Patent 5,982,564).

Applicant's admitted prior art as illustrated in Fig. 10 teaches an optical head very similar to that of the instant invention. For example, Fig. 10 teaches the following:

(a) as in claim 1, an integrated unit 7 in which a light source 2 and a photodetector 3 are combined into one component (Fig. 10);

(b) as in claim 1, an objective lens actuator 13 for maintaining an objective lens 10 as a means of focusing light onto a disk information recording medium 12 and actuating the objective lens 10 in a focus direction and a radial direction of the disk information recording medium 12; (Fig. 10);

(c) as in claim 1, an optical bench 16 for maintaining the integrated unit 7 and the objective lens actuator 13 (Fig. 10);

(d) as in claim 1, fixing the integrated unit 7 to the optical bench (Figs. 10 and 11; the integrated unit 7 is attached to the bench 16);

(e) as in claim 1, moving the objective lens actuator 13 respect to the optical bench 16 or the integrated unit 7 by rotating (θ_R and θ_T) the objective lens actuator 13 so that a desired detection signal can be obtained through reflected light from the disk information recording medium 12 (Figs. 10 and 13; specification, section 0018);

(f) as in claim 2, the moving of the objective lens actuator 13 comprises position adjustment in a plane approximately orthogonal to an axis of light entering the objective lens 3 (Figs. 10 and 13; horizontal plane adjustment such as moving the lens in θ_T direction);

(g) as in claim 3, the moving of the objective lens actuator 13 comprises position adjustment in the radial direction and/or a tangential direction of the disk information recording medium 209 (Fig. 10; X, Y direction; specification, section 0017);

(h) as in claim 4, the moving of the objective lens actuator 13 comprises skew adjustment of the objective lens actuator for adjusting a relative angle between the disk

information recording medium 12 and the objective lens 10 (Figs. 10 and 13; section 0018); and

(i) as in claim 5, the moving of the objective lens actuator 13 comprises position adjustment of the objective lens actuator in a direction of an axis of light entering the objective lens (Figs. 10 and 13; tilting adjustment; section 0018).

However, Applicant's admitted prior art of Fig. 10 does not teach the following:

(a) as in claim 1, the rotation of the objective lens actuator is about an approximate center of the objective lens in a plane approximately orthogonal to an axis of light entering the objective lens.

Nagai teaches an optical pickup where its objective lens actuator 13 rotates about an approximate center of the objective lens 10 in a plane approximately orthogonal to an axis of light entering the objective lens 10 (Figs. 4-6; column 5, lines 16-21).

The direction of a light beam passing through an objective lens's optical axis should be properly calibrated such as the admitted prior art of Figure 10 so that the reflected light beam can be received by a photodetector. Furthermore, to prevent the photodetector from shifting its position after the assembling process, it is easier to align the objective lens's actuator than

the photodetector so that the reflected light beam projects correctly on the photodetector. Hence, for an optical pickup such as Applicant's admitted prior art of Fig. 10, it would have been obvious to one of ordinary skill in the art to install a biaxial actuator such as Nagai's to hold the objective lens 10 of the admitted prior art as disclosed in Fig. 10 in order to have a common optical axis which is orthogonal to the axis of the light entering the objective lens 10, because the objective lens 10 positioned by Nagai's actuator provides any one of five degrees of axis movements so that the lens 10 is in alignment with the optical axis (Y direction) with respect to the adjustment operation of the biaxial actuator.

4. Claims 10-14 have limitations similar to those treated in the above rejection, and are met by the references as discussed above.

5. Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art as illustrated in Figs. 10-13 in view of Nagai (U.S. Patent 5,982,564) and Mitsumori et al. (U.S. Patent 5,005,162).

Applicant's admitted prior art of Figs. 10-13 in view of Nagai teaches an optical head very similar to that of the instant invention. However, both prior art Figs. 10-13 and Nagai do not teach the following:

(a) as in claim 6, the optical head further comprises a mirror positioned between the light source and the objective lens actuator, and after fixing the integrated unit to the optical bench, relative position adjustment of the mirror is carried out with respect to the optical bench or the integrated unit so that a desired detection signal can be obtained through reflected light from the disk information recording medium; and

(b) as in claim 7, the relative position adjustment of the mirror comprises angle adjustment of an axis of reflected light from the mirror.

Mitsumori teaches an integrated optical head having a reflective mirror where it can be adjusted (column 2, lines 57-62).

Relative position adjustment of a reflective mirror's angle is not novel. In fact, it is a necessary procedure of assembling a typical optical head in order to properly reflect a light beam

in a predetermined angle. For example, Mitsumori teaches a reflective mirror which can be adjusted to direct a light beam along a predetermined light path.

Therefore, during the adjustment steps of an optical head such as Applicant's admitted prior art, it would have been obvious to one of ordinary skill in the art at the time of invention to include the mirror adjustment step such as Mitsumori's in order to calibrate the reflective angle of Applicant's admitted prior art reflective mirror, because such calibrating procedure could set the mirror in a proper position to direct a light beam to its target such as an objective lens.

6. Claims 15 and 16 have limitations similar to those treated in the above rejection, and are met by the references as discussed above.

7. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(571) 273-8300 (for formal communications intended for entry. Or:

(571) 273-7585, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Any inquiry of a general nature or relating to the status of this application should be directed USPTO Contact Center (703) 308-4357; Electronic Business Center (703) 305-3028.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kim-Kwok CHU
Examiner AU2653

ke 3/16/06
March 16, 2006
(571) 272-7585


WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800